

WAG 9

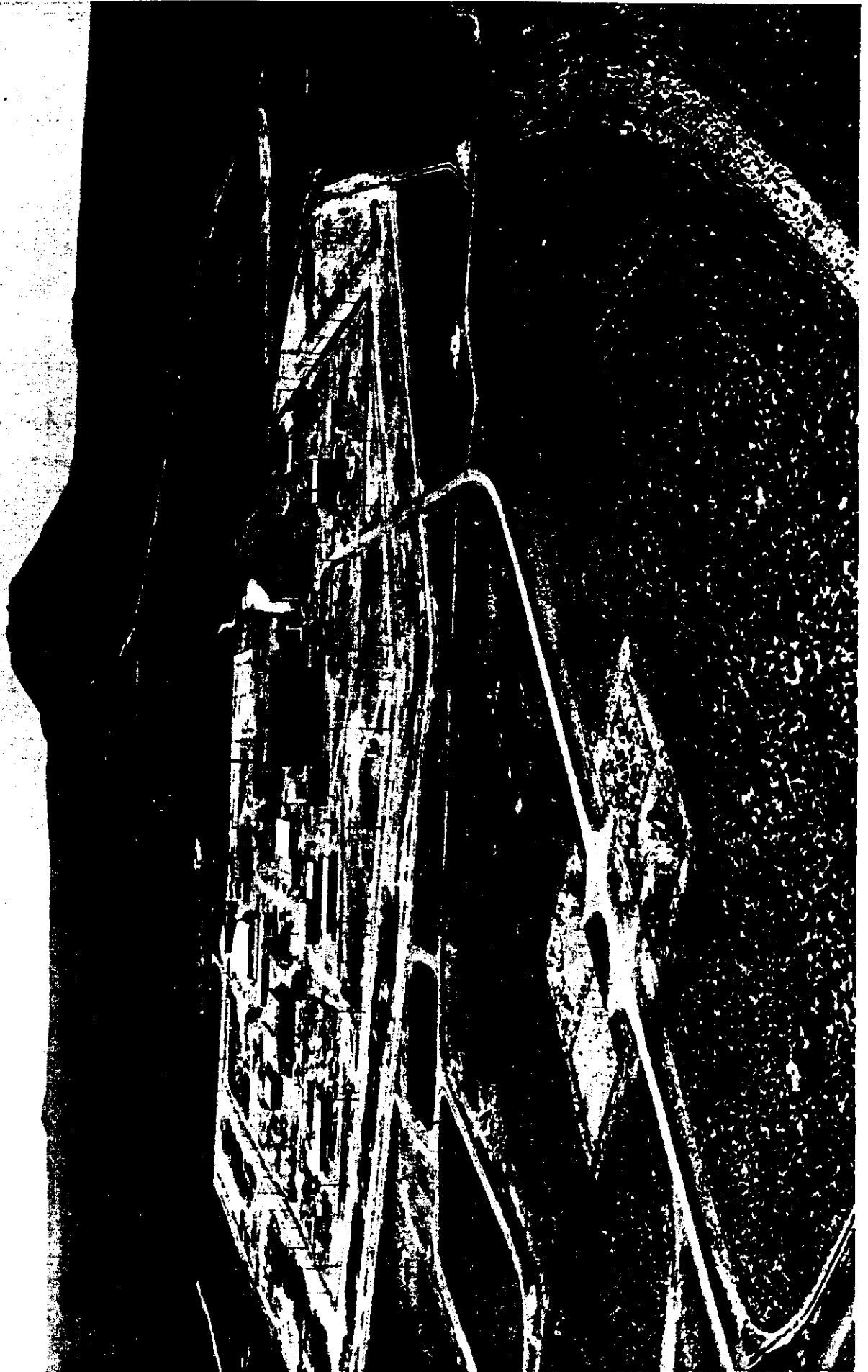
**SITE CODE:
ANL-04**

ANL Sewage Lagoons

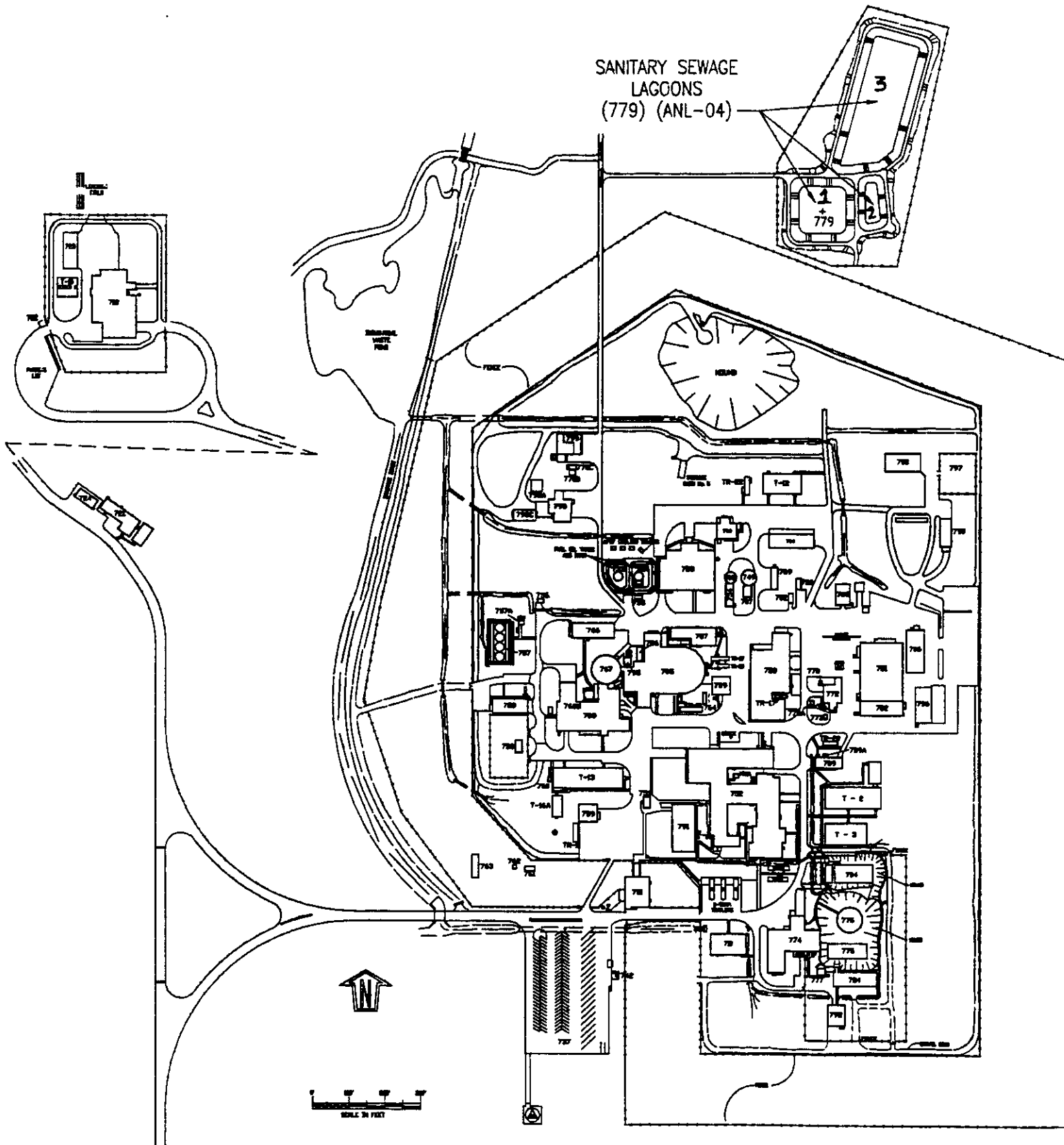


**Prepared by
Argonne National Laboratory-West**

Photo 4: ANL Sewage Lagoon (Left Side)
Large One - Final
Small One - Overflow (From Raw)



ARGONNE NATIONAL LABORATORY-WEST SITE PLOT PLAN



DETERMINATION

The U.S. Department of Energy, the U.S. Environmental Protection Agency (EPA)-Region 10, and the State of Idaho have completed a review of the referenced information for ANL-04 hazardous waste site, as it pertains to the INEL Federal Facility Agreement of December 9, 1991. Based on this review, the Parties have determined that further scoping under a Track 2 or RI/FS is justified. This decision is subject to review at the time of issuance of the Record of Decision.

Brief summary of the basis:

sewage lagoons with past 1 million gallon leak

References:

DOE Project Manager	<u>Track 1 PKs</u> <u>Lisa Green for J. Hyde</u>	<u>7/25/94</u> Date
EPA Project Manager	<u>Robert Allen</u>	<u>6/8/94</u> Date
Idaho Project Manager	<u>Chas. J. Nigam</u>	<u>6/8/94</u> Date

DECISION DOCUMENTATION PACKAGE COVER SHEET

prepared in accordance with

TRACK 1 SITES:
GUIDANCE FOR ASSESSING
LOW PROBABILITY HAZARD SITES
AT INEL

Site description: The ANL Sewage Lagoons, are located at the Sanitary Sewage Treatment Facility (#779), northeast of EBR-II.

Site ID: ANL-04

Operable Unit: 9-01

Waste Area Group: 9

I. SUMMARY - Physical description of the site:

The sanitary sewage lagoons are located at the Sanitary Sewage Treatment Facility, northeast of EBR-II. Two lagoons were constructed in 1965 along with a third built later in 1974.

According to engineering drawings, the three sanitary sewage lagoons cover approximately two acres of ground. With reference to ANL-W Plot Plan located at the beginning of this document, the lagoons' approximate dimensions are: (#1) - 150 ft x 150 ft x 7 ft, (#2) - 50 ft x 100 ft x 7 ft, and (#3) - 125 ft x 400 ft x 7 ft. The lagoons receive all sanitary wastes originating at ANL-W, with the exception of the Transient Reactor Test Facility and the Sodium Components Maintenance Shop. This includes sanitary wastes from rest rooms, change facilities, drinking fountains and the Cafeteria. The three lagoons are sealed with a 1/8" - 1/4" bottom bentonite liner and are located approximately 600 feet above the underground water table.

A large leak in the northeast corner of the third lagoon was detected after its construction in 1974. This leak resulted in the loss of over a million gallons of waste water through fissures that had not been sealed completely by the bentonite. This was rectified by using a hypalon liner (approximately 30 ml thick) over the northeast corner and sealing the seams. A recent study (conducted in August and September 1992) confirmed that the Sanitary Lagoons are functioning as evaporative ponds and not as percolating ponds, suggesting that the bentonite layer seal has remained intact.

Between 1975 and 1981, photoprocessing solutions were discharged from the Fuel Assembly and Storage Building (FASB) to the Sanitary Waste Lift Station, which discharges to the lagoons. Elon Wood Jr., manager of FASB during that period, estimates that approximately 1.32 Troy ounces of silver were discharged to the Sanitary Waste Lift Station. It has not been confirmed whether the silver was released to the sanitary lagoons or if it remained in the lift station. However, risk based calculations show that the estimated silver concentration for the given amount (1.32 Troy oz.) is well below that required to exceed a risk greater than 1×10^{-6} (see reference 19 and 20). Furthermore, photoprocessing was discontinued at FASB in 1981 and subsequently, there has been no further releases to the lift station.

With the exception of an occasional point source of low level medical radionuclides, there has been no known radioactive hazardous substances released into the Sanitary Lagoons. Periodic sampling of the lagoon and a radionuclide detector placed in the lift station supplying the lagoon (Sanitary Waste Lift Station-778) support these conclusions.

II. SUMMARY - Qualitative Assessment of Risk:

Although the spill of 1 million gallons of waste water through the liner of lagoon 3 raises the level of uncertainty regarding qualitative assessment of risk, the level of uncertainty in the obtained information is low due to the absence of any conflicting information, and the qualitative risk level is also low. Therefore, according to the Qualitative Risk and Uncertainty Evaluation Table, no action is required for this particular site.

III. SUMMARY - Consequences of Error:

(False Negative Error)-If no action is taken and the initial assessment is incorrect, there may be the potential for hazardous substances to be present in the sanitary wastes, which may potentially migrate into the groundwater, thus exposing the population to risks higher than expected.

(False Positive Error)-If remedial actions occur and site is clean, there may be an economical loss due to the high cost of clean up compared to the low environmental benefits which may occur.

IV. SUMMARY - Other Decision Drivers:

No other decision drivers are apparent for this site.

Recommended action:

The Sanitary Sewage Lagoons should be removed from the list of Solid Waste Management Units. This recommendation was reached when it was determined that the possibility of hazardous substances being present within the sanitary wastes was low. Additionally, it is also unlikely that migration of the sanitary wastes will occur.

Signatures	# PAGES:	DATE:
Prepared By:	DOE WAG Manager:	
Approved By:	Independent Review:	

DECISION STATEMENT
(by DOE RPM)

page 3

Date recd: 7/24/94

ML-04

Disposition:

Additional scoping and evaluation of data is necessary -
assessment of radiological data missing.

DATE: 7/25/94

PAGES (decision statement): 1

NAME: Lisa Green for Lyle

SIGNATURE: Lisa Green for Lyle

DECISION STATEMENT
(by EPA RPM)

page 4

Date recd:

6/7/94

ANL-04

Disposition:

3 Sewage lagoons operating since the mid-1960's. A leak in '74 resulted in a loss of 1 million gallons of wastewater. Based on potential for photoprocessing waste discharge, the evaluation concentrated on Ag discharge. However, the heavy metal contamination levels in the sludge are not provided nor are radiological survey data. Additional scoping and evaluation of available data is necessary.

DATE:

6/8/94

PAGES (decision statement):

NAME:

Wayne Pierr

SIGNATURE:

Wayne Pierr

DECISION STATEMENT
(by STATE RPM)

page 5

Date recd: 6/7/94

ANL-04

Disposition:

Although the documentation indicates that that no radioactive discharges of waste water occurred, sampling data is not provided to document this claim. This aspect should be further evaluated in a track 2 scoping order in the work plan for the comprehensive WAB-wide RI. Furthermore, further analysis of evidence for hazardous substances should be provided.

DATE:

6/7/94

PAGES (decision statement):

NAME:

Dean J. Nygard

SIGNATURE:

Dean J. Nygard

PROCESS/WASTE WORKSHEET
SITE ID ANL-04, ANL SEWAGE LAGOONS

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Col 1 Processes Associated with this Site	Col 2 Waste Description & Handling Procedures	Col 3 Description & Location of any Artifacts/Structures/Disposal Areas Associated with this Waste or Process
Process Sanitary Sewage Lagoons	Holding areas where sanitary sewage will biodegrade and eventually evaporate.	<p>Artifact (#1) Sanitary Sewage Lagoon Location Sanitary Sewage Treatment Facility, northeast of EBR-II. Description Lined with bentonite, 150 ft x 150 ft x 7 ft.</p> <p>Artifact (#2) Sanitary Sewage Lagoon Location Sanitary Sewage Treatment Facility, northeast of EBR-II. Description Lined with bentonite, 50 ft x 100 ft x 7 ft.</p> <p>Artifact (#3) Sanitary Sewage Lagoon Location Sanitary Sewage Treatment Facility, northeast of EBR-II. Description Lined with bentonite, 125 ft x 400 ft x 7 ft.</p>
Process		<p>Artifact Location Description</p> <p>Artifact Location Description</p> <p>Artifact Location Description</p>
Process		<p>Artifact Location Description</p> <p>Artifact Location Description</p> <p>Artifact Location Description</p>

SITE ID ANL-04, ANL SEWAGE LAGOONS
PROCESS (Col 1) Sanitary sewage lagoons

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[illegible]

a. ND = not detected
DL = detection limit in ppm

QUALITATIVE RISK AND RELIABILITY EVALUATION TABLE			
	QUALITATIVE RISK		
	Low	Medium	High
highly unreliable	<div>TRACK 2</div> <div> <div> <div>No Action Required</div> <div> <div></div> </div> </div> <div> <div>RI/FS</div> <div> <div>Interim Action</div> </div> </div> </div>		
highly reliable			
reliability	LOW concentration resulting in risk < 10 ⁴	MEDIUM	HIGH concentration resulting in risk > 10 ⁴
qualitative risk			

* If sufficient data exist to identify an appropriate remedy.

PROCESS Evaporative Ponds

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Question 1. What are the waste generation process locations and dates of operation associated with this site?

Block 1 Answer:

Construction of the sanitary sewage lagoons began in 1965 when the current sewage treatment facility, an Imhoff tank-leaching pit, was abandoned because of obnoxious odors. As the site grew, two additional sanitary lagoons were built, one later in 1965 and the third lagoon in November 1974. Two of the three sewage lagoons (the southwestern and northern ponds) continue to be utilized by ANL-W. The other lagoon is used as an emergency overflow basin and has not been in operation since 1965. They are located at the Sanitary Sewage Treatment Facility (#779), northeast of EBR-II.

Block 2 How reliable is/are the information source/s? X High Med Low (check one)
Explain the reasoning behind this evaluation.

Information is obtained from a preliminary proposal for ANL-W Sanitary Sewage Treatment Expansion.

Block 3 Has this INFORMATION been confirmed? X Yes No (check one)
If so, describe the confirmation.

Historical process data and engineering drawings confirm this information.

Block 4 Sources of Information (check appropriate box/es & source number from reference list)

No available information	<input type="checkbox"/>	_____	Analytical data	<input type="checkbox"/>	_____
Anecdotal	<input type="checkbox"/>	_____	Documentation about data	<input type="checkbox"/>	_____
Historical process data	<input checked="" type="checkbox"/>	<u>3,4,5</u>	Disposal data	<input type="checkbox"/>	_____
Current process data	<input type="checkbox"/>	_____	Q.A. data	<input type="checkbox"/>	_____
Areal photographs	<input type="checkbox"/>	_____	Safety analysis report	<input type="checkbox"/>	_____
Engineering/site drawings	<input checked="" type="checkbox"/>	<u>21</u>	D&D report	<input type="checkbox"/>	_____
Unusual Occurrence Report	<input type="checkbox"/>	_____	Initial assessment	<input type="checkbox"/>	_____
Summary documents	<input type="checkbox"/>	_____	Well data	<input type="checkbox"/>	_____
Facility SOPs	<input type="checkbox"/>	_____	Construction data	<input type="checkbox"/>	_____
OTHER	<input type="checkbox"/>	_____			

Question 2. What are the disposal process locations and dates of operation associated with this site?

Block 1 Answer:

The first two sanitary lagoons were built in 1965 with the construction of the third one beginning in 1974. Two of the three sewage lagoons (the southwest and northern ponds) continue to be utilized by ANL-W today. The lagoons receive sanitary wastes from rest rooms, change facilities, drinking fountains and the Cafeteria. All sanitary sewage collects in the Sanitary Waste Lift Station (#778), where it is pumped via a sewage pump/air lift to the primary lagoon (southwest pond) by means of a submerged standpipe. As the primary lagoon fills it cascades over a divider into the secondary lagoon (northern pond), where it will biodegrade and eventually evaporate. The other lagoon is utilized as an emergency overflow basin and has not been used since 1965.

Block 2 How reliable is/are the information source/s? X High Med Low (check one)

Explain the reasoning behind this evaluation.

Information is obtained from an Initial Assessment.

Block 3 Has this INFORMATION been confirmed? X Yes No (check one)

If so, describe the confirmation.

Historical data and engineering drawings confirm this information.

Block 4 Sources of Information (check appropriate box/es & source number from reference list)

No available information	[] _____	Analytical data	[] _____
Anecdotal	[] _____	Documentation about data	[] _____
Historical process data	[X] <u>3,4,5,6</u>	Disposal data	[] _____
Current process data	[] _____	Q.A. data	[] _____
Areal photographs	[] _____	Safety analysis report	[] _____
Engineering/site drawings	[X] <u>21</u>	D&D report	[] _____
Unusual Occurrence Report	[] _____	Initial assessment	[X] <u>1</u>
Summary documents	[] _____	Well data	[] _____
Facility SOPs	[] _____	Construction data	[] _____
OTHER	[] _____		

PROCESS Evaporative Ponds

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Question 3. Is there empirical, circumstantial, or other evidence of migration? If so, what is it?

Block 1 Answer:

A large leak in the northeast corner of the third lagoon was detected after its construction in 1974. This leak resulted in the loss of over a million gallons of waste water through fissures that had not been sealed properly by the bentonite. This was rectified by using a hypalon liner over the northeast corner. In August and September of 1992 a test was conducted which verified that the lagoons are evaporative ponds and not percolation ponds. The seepage rates were found to be 0.2" - 0.02", while evaporative rates varied from .1" - 2.3". This test confirmed that the bentonite seal has remained intact and that no migration has occurred into the surrounding soil or groundwater.

Block 2 How reliable is/are the information source/s? X High Med Low (check one)

Explain the reasoning behind this evaluation.

Information obtained from a preliminary proposal and from a memo reporting the leak.

Block 3 Has this INFORMATION been confirmed? X Yes No (check one)

If so, describe the confirmation.

Information is confirmed by historical process data and a Pond Seepage Test.

Block 4 Sources of Information (check appropriate box/es & source number from reference list)

No available information	[]	_____	Analytical data	[]	_____
Anecdotal	[X]	7	Documentation about data	[]	_____
Historical process data	[X]	4,5	Disposal data	[]	_____
Current process data	[]	_____	Q.A. data	[]	_____
Areal photographs	[]	_____	Safety analysis report	[]	_____
Engineering/site drawings	[]	_____	D&D report	[]	_____
Unusual Occurrence Report	[]	_____	Initial assessment	[]	_____
Summary documents	[]	_____	Well data	[]	_____
Facility SOPs	[]	_____	Construction data	[]	_____
OTHER	[X]	15			

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Question 4. Is there evidence that a source exists at this site? If so, list the sources and describe the evidence.

Block 1 Answer:

Between 1975 and 1981, photoprocessing solutions were discharged from the Fuel Assembly and Storage Building (FASB) to the Sanitary Waste Lift Station, which discharges to the lagoons. Elon Wood Jr., manager of FASB during that period, estimates that approximately 1.32 Troy ounces of silver was discharged to the Sanitary Waste Lift Station. It has not been confirmed whether the silver was released to the sanitary lagoons or if it remained in the lift station. However, risk based calculations show that the estimated silver concentration (68 ppm) for the given amount (1.32 Troy oz.) is well below that required to exceed a risk greater than 1×10^{-6} (see reference 19 and 20). Furthermore, photoprocessing was discontinued at FASB in 1981 and subsequently, there have been no further releases to the lift station.

With the exception of an occasional point source of low level medical radionuclides, there has been no known radioactive hazardous substances released into the Sanitary Lagoons. Periodic sampling of the lagoon and a radionuclide detector placed in the lift station supplying the lagoon (Sanitary Waste Lift Station) support these conclusions.

Block 2 How reliable is/are the information source/s? X High Med Low (check one)

Explain the reasoning behind this evaluation.

Information is based upon analytical data obtained from sampling and silver concentration calculations.

Block 3 Has this INFORMATION been confirmed? X Yes No (check one)

If so, describe the confirmation.

This information is confirmed by ANL-W Analytical Lab, CFA and Elon Wood Jr., former manager of FASB.

Block 4 Sources of Information (check appropriate box/es & source number from reference list)

No available information	<input type="checkbox"/>	Analytical data	<input checked="" type="checkbox"/>	10
Anecdotal	<input checked="" type="checkbox"/>	Documentation about data	<input checked="" type="checkbox"/>	11
Historical process data	<input type="checkbox"/>	Disposal data	<input checked="" type="checkbox"/>	12
Current process data	<input type="checkbox"/>	Q.A. data	<input type="checkbox"/>	
Areal photographs	<input type="checkbox"/>	Safety analysis report	<input type="checkbox"/>	
Engineering/site drawings	<input type="checkbox"/>	D&D report	<input type="checkbox"/>	
Unusual Occurrence Report	<input type="checkbox"/>	Initial assessment	<input type="checkbox"/>	
Summary documents	<input type="checkbox"/>	Well data	<input type="checkbox"/>	
Facility SOPs	<input type="checkbox"/>	Construction data	<input type="checkbox"/>	
OTHER	<input checked="" type="checkbox"/>			19,20

PROCESS Evaporative Ponds

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Question 5. Does site operating or disposal historical information allow estimation of the pattern of potential contamination? If the pattern is expected to be a scattering of hot spots, what is the expected minimum size of a significant hot spot?

Block 1 Answer:

There is no evidence of a pattern of potential contamination, which, if there had been one, would be confined to the known areas of the lagoons. Although it was confirmed that approximately 1.32 Troy ounces of silver was released from the Fuel Assembly and Storage Building (FASB) to the Sanitary Waste Lift Station, which discharges to the lagoons, it has not been verified whether the silver was discharged to the sanitary lagoons or if it remained in the lift station and is therefore assumed to be contained in the sludge at the lift station. However, risk based calculations show that the estimated silver concentration for the given amount (1.32 Troy oz.) is well below that required to exceed a risk greater than 1×10^{-6} . Furthermore, photoprocessing was discontinued at FASB in 1981 and subsequently, there has been no further releases to the lift station.

With the exception of an occasional point source of low level medical radionuclides, there has been no known radioactive hazardous substances released into the Sanitary Lagoons. Periodic sampling of the lagoon and a radionuclide detector placed in the lift station supplying the lagoon (Sanitary Waste Lift Station) support these conclusions.

Additionally, a recent study (August and September 1992) confirmed that the bentonite seal remains intact and that seepage to the ground is non-existent.

Block 2 How reliable is/are the information source/s? X High Med Low (check one)
Explain the reasoning behind this evaluation.

The non-existent contamination pattern is supported by sampling data and a Pond Seepage Test.

Block 3 Has this INFORMATION been confirmed? X Yes No (check one)
If so, describe the confirmation.

This information is confirmed by ANL-W Analytical Lab, CFA and Elon Wood Jr., former manager of FASB.

Block 4 Sources of Information (check appropriate box/es & source number from reference list)

No available information	[] <u> </u>	Analytical data	[X] <u>10</u>
Anecdotal	[X] <u>18</u>	Documentation about data	[] <u> </u>
Historical process data	[] <u> </u>	Disposal data	[X] <u>12</u>
Current process data	[] <u> </u>	Q.A. data	[] <u> </u>
Areal photographs	[] <u> </u>	Safety analysis report	[] <u> </u>
Engineering/site drawings	[] <u> </u>	D&D report	[] <u> </u>
Unusual Occurrence Report	[] <u> </u>	Initial assessment	[] <u> </u>
Summary documents	[] <u> </u>	Well data	[] <u> </u>
Facility SOPs	[] <u> </u>	Construction data	[] <u> </u>
OTHER	[X] <u>15,19</u>		

PROCESS Evaporative Ponds

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Question 6. Estimate the length, width, and depth of the contaminated region. What is the known or estimated volume of the source? If this is an estimated volume, explain carefully how the estimate was derived.

Block 1 Answer:

There is no evidence that a contaminated region exists. Recent tests confirmed that the bentonite seal remains intact, therefore no release to the environment has occurred.

Block 2 How reliable is/are the information source/s? XHigh _Med _Low (check one)

Explain the reasoning behind this evaluation.

Information is obtained from engineering drawings, disposal data and a Pond Seepage Test.

Block 3 Has this INFORMATION been confirmed? XYes _No (check one)

If so, describe the confirmation.

Disposal data is reviewed by Plant Services.

Block 4 Sources of Information (check appropriate box/es & source number from reference list)

No available information	<input type="checkbox"/>	_____	Analytical data	<input checked="" type="checkbox"/>	<u>10</u>
Anecdotal	<input type="checkbox"/>	_____	Documentation about data	<input checked="" type="checkbox"/>	<u>13</u>
Historical process data	<input type="checkbox"/>	_____	Disposal data	<input checked="" type="checkbox"/>	<u>12</u>
Current process data	<input type="checkbox"/>	_____	Q.A. data	<input type="checkbox"/>	_____
Areal photographs	<input type="checkbox"/>	_____	Safety analysis report	<input type="checkbox"/>	_____
Engineering/site drawings	<input checked="" type="checkbox"/>	<u>21</u>	D&D report	<input type="checkbox"/>	_____
Unusual Occurrence Report	<input type="checkbox"/>	_____	Initial assessment	<input type="checkbox"/>	_____
Summary documents	<input type="checkbox"/>	_____	Well data	<input type="checkbox"/>	_____
Facility SOPs	<input type="checkbox"/>	_____	Construction data	<input type="checkbox"/>	_____
OTHER	<input checked="" type="checkbox"/>	<u>15</u>			

PROCESS Evaporative Ponds

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Question 7. What is the known or estimated quantity of hazardous substance/constituent at this source?
If the quantity is an estimate, explain carefully how the estimate was derived.

Block 1 Answer:

Even though it has been confirmed that approximately 1.32 Troy ounces of silver was released from the Fuel Assembly and Storage Building (FASB) to the Sanitary Waste Lift Station, which discharges to the lagoons, it has not been verified whether the silver was discharged to the sanitary lagoons or if it remained in the lift station. The estimated amount of silver was calculated using efficiency factors obtained from Eastman Kodak, the number of plates processed, and the concentration of the original photoprocessing solution. However, risk based calculations show that the estimated silver concentration for the given amount (1.32 Troy oz.) is well below that required to exceed a risk greater than 1×10^{-6} . Furthermore, photoprocessing was discontinued at FASB in 1981 and subsequently, there has been no further releases to the lift station.

Rare discharges into the lagoons of medical treatment radioactive isotopes have occurred, but periodic sampling of the lagoons confirm that there is no impact on the contamination of the lagoons.

Block 2 How reliable is/are the information source/s? X High Med Low (check one)
Explain the reasoning behind this evaluation.

Information is obtained from sampling data and silver concentration calculations.

Block 3 Has this INFORMATION been confirmed? X Yes No (check one)
If so, describe the confirmation.

This information is confirmed by ANL-W Analytical Lab, CFA and Elon Wood Jr., former manager of FASB.

Block 4 Sources of Information (check appropriate box/es & source number from reference list)

No available information	<input type="checkbox"/>		Analytical data	<input checked="" type="checkbox"/>	10
Anecdotal	<input checked="" type="checkbox"/>	18	Documentation about data	<input checked="" type="checkbox"/>	13
Historical process data	<input type="checkbox"/>		Disposal data	<input checked="" type="checkbox"/>	12
Current process data	<input type="checkbox"/>		Q.A. data	<input type="checkbox"/>	
Areal photographs	<input type="checkbox"/>		Safety analysis report	<input type="checkbox"/>	
Engineering/site drawings	<input type="checkbox"/>		D&D report	<input type="checkbox"/>	
Unusual Occurrence Report	<input type="checkbox"/>		Initial assessment	<input type="checkbox"/>	
Summary documents	<input type="checkbox"/>		Well data	<input type="checkbox"/>	
Facility SOPs	<input type="checkbox"/>		Construction data	<input type="checkbox"/>	
OTHER	<input checked="" type="checkbox"/>	19,20			

PROCESS Evaporative Ponds

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Question 8. Is there evidence that this hazardous substance/constituent is present at the source as it exists today? If so, describe the evidence.

Block 1 Answer:

There is no evidence that a source exists at the site. Although it was confirmed that approximately 1.32 Troy ounces of silver was released from the Fuel Assembly and Storage Building (FASB) to the Sanitary Waste Lift Station, it has not been verified whether the silver was discharged to the sanitary lagoons or if it remained in the lift station. However, risk based calculations show that the estimated silver concentration for the given amount (1.32 Troy oz.) is well below that required to exceed a risk greater than 1×10^{-6} . Furthermore, photoprocessing was discontinued at FASB in 1981 and subsequently, there has been no further releases to the lift station.

Rare discharges into the lagoons of medical treatment radioactive isotopes have occurred, but periodic sampling of the lagoons confirm that there is no impact on the contamination of the lagoons.

Block 2 How reliable is/are the information source/s? X High Med Low (check one)
Explain the reasoning behind this evaluation.

Information is obtained from sampling data and silver concentration calculations.

Block 3 Has this INFORMATION been confirmed? X Yes No (check one)
If so, describe the confirmation.

This information is confirmed by ANL-W Analytical Lab, CFA and Elon Wood Jr., former manager of FASB.

Block 4 Sources of Information (check appropriate box/es & source number from reference list)

No available information	<input type="checkbox"/>	Analytical data	<input checked="" type="checkbox"/>	10
Anecdotal	<input checked="" type="checkbox"/>	Documentation about data	<input checked="" type="checkbox"/>	13
Historical process data	<input type="checkbox"/>	Disposal data	<input checked="" type="checkbox"/>	12
Current process data	<input type="checkbox"/>	Q.A. data	<input type="checkbox"/>	
Areal photographs	<input type="checkbox"/>	Safety analysis report	<input type="checkbox"/>	
Engineering/site drawings	<input type="checkbox"/>	D&D report	<input type="checkbox"/>	
Unusual Occurrence Report	<input type="checkbox"/>	Initial assessment	<input type="checkbox"/>	
Summary documents	<input type="checkbox"/>	Well data	<input type="checkbox"/>	
Facility SOPs	<input type="checkbox"/>	Construction data	<input type="checkbox"/>	
OTHER	<input checked="" type="checkbox"/>			19,20

REFERENCES

1. Initial Assessment Form, 10/15/86
2. Engineering Standards For U. S. Atomic Energy Commission, Idaho Operations Office, Idaho Falls, Idaho (as revised May, 1960)
3. Letter, H.A. Flaughter to File, "Sewage Disposal System - EBR-II," 3/12/64
4. Preliminary Proposal for the Idaho-East Area Sanitary and Industrial Waste-Disposal Expansion for Argonne National Laboratory, 5/25/65
5. Letter, R.P. Hearn to Distribution, "ANL-West Sanitary Sewage Treatment Expansion Preliminary Proposal," 1/16/74
6. Scope of Work for Argonne-West Sanitary Sewage Treatment Expansion Facility No.779 (various sections), July 18, 1974, Document No. W7790-0104-SA-00
7. Letter, R.P. Hearn to R.J. Teunis, "Sanitary Sewage Treatment Expansion, Facility #779," 11/21/74
8. Water Quality Criteria for Sanitary Lagoons
9. Letter, L.C. Witbeck to C.E. Clark, "ANL-W Environmental Sampling and Analysis Information," 2/1/88
10. Argonne National Laboratory-West 1992 Environmental Surveillance Report (selected pages)
11. ANL-W ESH Manual, "Sanitary Lagoon Environmental Sampling Procedure," (Section IX, Chapter 25), December 1990
12. Waste Management Data, Plant Services, ANL-West (Jan.1991 - Dec.1991)
13. INEL Groundwater Monitoring Plan (selected pages)
14. Memo of Conversation, Jennifer Fedder with Bill Stevens, 9/15/92
15. ANL-W 779 Seepage Test, D.R. Braun, November 1992
16. Review Comment Response, 1/5/93
17. Environmental Sample Summary, 2/3/93 and 2/5/93
18. Memo of Conversation, Ed Kennedy with Elon Wood Jr., 2/5/93
19. Silver Concentration Calculations (J. Fedder, 3/18/93)
20. Track 1 Risk Evaluation for Industrial Waste Lift Station, 2/23/93
21. Engineering Drawings: W7790-0103-DD-01 (pages 1-4 of 4)
IPE-779-1 (pages 4,5 of 9)